**Amendment to the Specification:**

Please amend the specification as shown and described below. No new matter has been added.

Please add the following paragraph immediately following paragraph [0022] of the published application:

FIG. 6 is a block diagram of a receiver according to an embodiment of the present subject matter.

Please amend paragraphs [0025], [0026], [0030] and [0043] of the published application as follows:

**[0025]** Starting at zero phase (state "zero"), the next state is in the set of {4, -4, 12, -12}, this next state is obtained by multiplying the modulation index $h_i$ (4/16) by $a_i$ , where the denominator and π are factored out and ignored here for purposes of clarity. The next input (data bits) is modulated by the alternate modulation index $h_2$ (5/16) using equation 1 and results in a state contained in the set of $\{\pm 1, \pm 3, \pm 7, \pm 9, \pm 11, \pm 17, \pm 19, \pm 27\}$. Wrapping the phase value between π and –π results in the states being rewritten as $\{\pm 1, \pm 3, \pm 7, \pm 9, \pm 11, \pm 15, \pm 13, \pm 5\}$. As can be seen, all the odd states are possible. The third symbol ($h_1$=4/16) will again result with a state in the set of all the odd states, while the fourth symbol , modulated by ($h_2$=5/16) ~~($h_{2=5}$/16)~~ will result in a state in the set of all possible even states. Thus, the system can return to state "zero". This example shows a return to state "zero" in four symbols, however if the system is in any even state (which "zero" is one of) and the modulation index $h_i$ starts with the odd numerator, it should be apparent that it only requires 3 state transitions (symbols) to return to the phase state "zero". Therefore, in a system hop starting in state "zero", applying the modulation index with the odd numerator first, the system hop can be returned to the state "zero" with only

3 symbol transitions. Therefore, by enabling each hop to start and end in the "zero" state, the hop can be demodulated without knowledge of the previous hop end state.

**[0026]** To enable demodulation in a hop as described above independently of the previous hop, the data packet is structured over the hop period. Figure 1 illustrates the hop period ~~frame~~ 100 for the 9.6 k sps case. During the hop period 120, a percentage of the time the oscillator will be transitioning to the next frequency. If for example, the frequency transition period 121 of the oscillator is a multiple of 4 symbols, it can be seen that the transmitting modem can be returned to the same state zero after each multiple of 4 symbols. As seen in Figure 1, the transition period 121 is composed of 4 symbol periods T1-T4 in which the phase state starts and ends in the zero phase state. Using a 9.6k/s symbol rate and a hopping rate of 200 hops per second (hps), a total of 48 symbols will fit into the hop frame. Allocating 4 symbols for frequency switching (.416ms), and 3 symbols 122 for flushing the transmitter back to state "zero" as described previously, there remains 41 symbols left for data 123 per each hop frame. These symbol periods are shown as D1-D41 in Figure 1.

**[0030]** Since the data rate matches nicely with a common user rate, it is advantageous to use only 40 data bits. Data symbol D41 ~~104~~, shown in Figure 1 can thus be ignored or used as a pilot symbol. The exact location of the symbol is not important as long as it is known.

**[0043]** To extend the capability described herein to other modulation rates, similar analysis can be performed for each fundamental rate. One analysis results in a system with a set of data rates as shown in Table 4. FIG. 6 is a block diagram of a receiver according to an embodiment of the present subject matter. These solution examine a fixed hopping rate of 200 hps and an allotted frequency transition time of 416 microseconds.

Please amend the identification of the table immediately following paragraph [0043] of the published application as follows:

Table 4 [[5]]